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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,380	04/25/2001	Bernard Andre	BREV 13186	7186

7590 10/04/2002  
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EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/830,380

Applicant(s)

ANDRE ET AL.

Examiner

Tamra L. Dicus

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 August 2002 (prior art).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 4,6, and 10 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. To be consistent, please change "the other" to "the another", as stated in the claims they depend from.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The specification lacks definition of "a surface treatment", or exactly how such a surface is treated.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,399,435 to Ando et al. in view of USPN 5,623,375 to Floch et al. and further in view of USPN 5,670,248 to Lazarov et al. and USPN 5,691,044 to Oyama et al.

Ando teaches an amorphous oxide thin film (layer) may consist of hafnium (hafnium oxide under amorphous form) at col. 3, lines 12-53. Such a thin film may be included in a stack of thin layers, where a metal oxide, such as silicon oxide may be above or below an amorphous hafnium oxide layer (see col. 9, lines 25-65), which may be any optical component such as a mirror, glass, or camera lens at col. 1, lines 10-16.

Ando does not explicitly state the density of an amorphous hafnium oxide layer. Nevertheless, Lazarov teaches material in amorphous form of a metal such as hafnium oxide that may have a density may be between 3.7 and 4.5 g/cm<sup>3</sup>, meeting the Applicant's limitation of a density less than 8 g/cm<sup>3</sup>. See col. 3, lines 30-39, 62-63 and col. 5, line 12. Hence, it would have been obvious to one of ordinary skill in the art to modify the thin layer or stack of layers of Ando to produce a film that may be employed as an antireflective filter, optimizing adsorption of wavelengths for use in various industries as taught by Lazarov at col. 5, lines 10-47.

While Ando does not specifically state amorphous hafnium oxide being in alternate layers, he does state since the substrate may be of any metal oxide, such as silica at col. 9, line 30-31, a stack of layers comprising amorphous hafnium oxide may be on each side of the substrate. In addition, Floch teaches it is well known to produce layers of metal oxides, such as hafnium and silicon in alternating fashion in order to produce optical articles such as mirrors that have a desired wavelength at col. 3, lines 4-25. Therefore it would have been obvious to one of

ordinary skill in the art to modify the stack of films of Ando to include alternative layers of amorphous hafnium oxide as taught by Ando to produce a different arrangement and also by Floch to prevent cracks and vary the refractive indices depending upon the desired wavelength or thickness of a stack of thin films or optical component.

Regarding claim 3, the phrase "deposited above or below" is a process limitation in a product claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531.

Regarding claim 7, the limitation "surface treatment" is an act of treating a surface, which is a process limitation in a product claim. Process notwithstanding. See MPEP 2113. Moreover, Ando teaches a surface treatment of an optical component containing amorphous hafnium oxide, where boron or silicon is added within to produce a smoothness of a surface, low frictional resistance, and high durability at col. 12, lines 33-45. In addition, Oyama teaches at col. 9, lines 3-27, optical components having various surface treatments. Therefore it would have been obvious to one of ordinary skill in the art to modify the stack of layers or optical components of Ando to produce a film having a surface treatment in order to reduce costs as taught by Oyama at col. 9, lines 13-14.

All references are analogous art as both references are in the same field of endeavor, such as optical film technology.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tamra L. Dicus  
Examiner  
Art Unit 1774

September 30, 2002

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

